Oso Creek / Oso Bay Bacteria TMDL
Stakeholder Meeting Summary

January 18, 2005

Meeting Attendees	Affiliation
John Wood	**Center for Coastal Studies, TAMUCC**
Brien Nicolau	**Center for Coastal Studies, TAMUCC**
Joe Kramer	**Kramer Company/Miller Environmental Services**
Art Sosa	**City of Corpus Christi Dept. of Development**
John Sendejar	**City of Corpus Christi Solid Waste Services**
Kim McGuire	**City of Corpus Christi**
Max Castaneda	**City of Corpus Christi**
Peggy Sumner	**City of Corpus Christi**
Ron Massey	**City of Corpus Christi**
R. Jay Reining	**City of Corpus Christi**
Ken Faughan	**Robstown Area Development Commission**
Andy Garza	**Texas State Soil and Water Conservation Board**
Gary Eddins	**Barney M Davis Power Plant**
Jim Bowman	**Coastal Bend Bays & Estuaries Program, Inc.**
Leah Pummill	**Audubon Outdoor Club**
Lois Huff	**Turner, Collie & Braden Inc.**
Rocky Freund	**Nueces River Authority**
Teresa Carrillo	**Coastal Bend Bays Foundation**
Dr. Patrick J. Thomas	**Richter Architects**
Carl Didier	**Dykema Architects**
David Conoly	**Property Owner/Concerned Citizen**
Karl W Schuler	**Corpus Christi Wind Surfing Association**
Thomas "Tim" Matthews	**Saltwater Fisheries Enhancement Association**
Bryan Gulley	**Unknown**
Phil Hurst	**Unknown**
John W. Tunnell, Jr.	Center for Coastal Studies, TAMUCC
Liz Smith	Center for Coastal Studies, TAMUCC
Bob Furgason	Harte Research Institute for Gulf of Mexico Studies
Philippe Tissor	TAMUCC
Johnny W. Cotton	Cotton Landreth Kramer Inc.

Meeting Attendees	Affiliation
Bill Green	Goldston Engineering, Inc.
Carl Crull	HDR Engineering
Janet Sims	Alan Plummer & Associates, Inc
Beau Hardegree	US Fish & Wildlife Service
Robyn Cobb	US Fish & Wildlife Service
Clare Lee	US Fish & Wildlife Service
Johnny French	US Fish & Wildlife Service
John Rodriguez	City of Robstown
Cliff Beaber	City of Corpus Christi
Foster Crowell	City of Corpus Christi Wastewater Division
Juan Perales	Olivarri & Associates
Mark Shell	City of Corpus Christi
Brian Holmes	TCEQ Region 14
Paul Thornton	Corpus Christi Botanical Gardens
Daphne McCann	Coastal Bend Land Trust
Pat Suter	Coastal Bend Sierra Club
Leo Trevino	Coastal Bend Bays & Estuaries Program, Inc.
Ray Allen	Coastal Bend Bays & Estuaries Program, Inc.
Mark Marshall	Unknown
Carl Didier	Property Owner/Concerned Citizen
Guy Watts	Property Owner/Concerned Citizen
Ken Jobe	Unknown
Leslie Smith	Unknown

Bold indicates individual volunteered to serve on Watershed Advisory Group (WAG).

Introduction – Earlene Lambeth

Earlene Lambeth (TCEQ) opened the first public meeting to provide information to the stakeholders on the Oso Creek and Oso Bay Total Maximum Daily Load (TMDL) bacteria project. The Coastal Bend Bays & Estuaries Program provided refreshments for the meeting. The meeting was held at Texas A&M University-Corpus Christi, Carlos F. Truan Natural Resources Center. Self-introductions were made with approximately 60 people in attendance representing a diverse group of citizens, local, state and federal governmental agencies, businesses and industries. Various handouts were made available to the attendees including a map of the watershed and the meeting presentations

The purpose of the meeting was to inform the public and stakeholders on the status of work that was being performed as part of a TMDL project for Oso Creek and Oso Bay. The evenings' meeting agenda included presentations on the states' TMDL program and process, the history and development of the Oso Creek/Oso Bay bacteria project, the 305(b) and 303 (d) listing processes, and the upcoming water quality monitoring and model development projects. A big part of the meeting was to provide an opportunity for the stakeholders to have input into the upcoming monitoring and model development projects and to establish a Watershed Advisory Group (WAG).

Basic ground rules were briefly discussed for the first informal meeting of the Oso Creek and Oso Bay WAG. The stakeholders were asked to only make comments related to the agenda of the Oso Creek and Oso Bay bacteria project.

Lois Huff with the Coastal Bend Bays Foundation reported during the introductions that the City of Corpus Christi and the Coastal Bend Land Trust had formed an adhoc work group for the Oso Bay watershed. She reported that the National Park Service had recently issued the group a grant. Anyone interested in joining the group should contact the Coastal Bend Bays Foundation.

Earlene Lambeth spoke about the importance of public participation in the development of the TMDL project and how this ensures that state government considers local perspectives in its decisions. She said that the Oso Creek/Oso Bay project would be a joint effort among the state and local stakeholders and will follow HB 2912 requirements. Ms. Lambeth reported to the group that the TCEQ is now soliciting stakeholders to form a consensus-driven, twenty-four member Oso Creek/Oso Bay WAG. The WAG will operate under ground rules and will be a diverse, balanced representation of the people throughout the watershed. The WAG will represent various local, state & federal governmental agencies, recreational users, landowners, businesses and the regulated community. Draft ground rules were distributed at the meeting for stakeholders who would like to participate on the WAG and comment on the draft. A web site will also be maintained at the following web address:
http://www.tnrcc.state.tx.us/water/quality/tmdl/osobaybacteria.html

Meeting announcements, summaries, copies of handouts, presentations, etc. will be made available at this website as they become available.

The TCEQ will maintain a database of interested stakeholders for mail out notices, draft-meeting summaries, and will communicate by e-mail as needed.

PROJECT OVERVIEW – Sandra Alvarado
Ms. Sandra Alvarado, the TMDL Project Manager from the TCEQ was the next meeting presenter and focused the discussion on the overall TMDL process. She explained that the goal of a TMDL is to restore water quality in the waterbody. The Oso Creek and Oso Bay project watershed includes the cities of Corpus Christi and Robstown. The two segments in the watershed are known as segment 2485 (Oso Bay) and 2485A (Oso Creek). The majority of land use in the area is cultivated or planted (68%), with 14% being urban. Ms. Alvarado reported that there are ten wastewater permitted discharges in the watershed, 6 major dischargers and 4 minor dischargers and reported their daily

average flow. The largest permitee is the Barney Davis Power Station with an average daily flow of 540 MGD. It has been reported that the power station is in the process of closing which may significantly impact the flow in Oso Creek.

Ms. Alvarado told the group about a workshop that was held in May 2004 in Corpus Christi that jump-started the public's interest in the Oso Creek/Oso Bay watershed. The goal of the workshop was to develop a common vision for the year 2020 for the Oso Creek and Oso Bay watershed. One of the questions asked at the workshop was "how do you envision the watershed to look fifteen years down the road"? One of the reoccurring themes reported was people wanted the waters to be fishable and swim-able, they wanted improved water quality, they wanted to develop a green-belt along the creek, they wanted to be able to use the resources that the watershed had to offer. Ms. Alvarado said she would like the momentum that was started at that workshop to continue through the TMDL project.

Ms. Alvarado explained how the 303(d) List identifies water bodies that do not meet, or are not expected to meet, applicable water quality standards. The EPA reviews and approves the 303(d) list that is compiled by the TCEQ every two years. Ms. Alvarado reported that the designated contact recreation use in Oso Creek and Oso Bay is not being met due to exceedence of the water quality standard. This places individuals that come in contact with the water by swimming, kayaking, or wade fishing at a greater risk of illness than if the water quality standard were being met. The contact recreation use is measured in saltwater using the indicator bacteria *Enterococci* (a subgroup of fecal streptococci bacteria).

A TMDL determines the amount of a pollutant (or load) that a body of water can receive and still support its designated uses, such as recreation or support of aquatic life. The load is then allocated among all the potential sources of pollution within the watershed and measures to reduce pollutant loads are developed as necessary through the Implementation Plan (IP). The whole watershed can be addressed considering known point sources such as from industries and domestic wastewater treatment plants. In addition, nonpoint sources (i.e. agricultural and urban runoff) are also considered and factored into the TMDL.

The main elements of the final TMDL document will be: 1) problem definition, 2) endpoint identification, 3) source analysis, 4) linkage between sources and receiving waters, 5) a margin of safety, and 6) a pollutant load allocation (including point, nonpoint and natural sources of bacteria).

After the TMDL is prepared the next step would be to develop an Implementation Plan (IP). An IP is a detailed description of the regulatory and voluntary management measures necessary to achieve the pollutant reduction identified through the TMDL.

Ms. Alvarado then presented information on the historical data that has been collected from Oso Creek and Oso Bay that resulted in the 303(d) listing. She reviewed monitoring sites that have been monitored since the early 1980's quarterly and recognized the importance of previous Oso Bay studies that have been done and how they will be used in the on-going TMDL project.

The TCEQ has initiated a contract with the Center for Coastal Studies at Texas A&M University Corpus Christi through August 2005. This current monitoring project will continue through August 31, 2005. Proposals have been submitted by TCEQ for additional funding to extend the monitoring plan for another six months. This will provide a total of 1-year of monitoring data.

Ms. Alvarado's presentation slides can be viewed on line at:
http://www.tnrcc.state.tx.us/water/quality/tmdl/67-TMDL101_2005.pdf

http://www.tnrcc.state.tx.us/water/quality/tmdl/67-OsoHistoricalDataReview.pdf

SAMPLING PLAN – Dr. Joanna Mott

Dr. Joanna Mott was the next speaker to present a presentation on the bacteria sampling plan for the TMDL project and asked for input from the stakeholders. The next step in the monitoring portion of the project will be submission and approval of a Quality Assurance Project Plan (QAPP) through the TCEQ and the EPA. The QAPP identifies the stations that will be monitored, frequency and parameters to be measured. Several trips have been made into the watershed with thoughts of two different types of monitoring stations – 1) monitoring for ambient conditions (8 historical stations) and 2) 3 new proposed upstream stations to get a better handle on potential sources.

Standard TCEQ monitoring of field parameters (salinity, PH, Dissolved Oxygen (DO), flow measurements, etc.) and *Enterococci* will be performed to collect more data. The frequency will also be increased to see if the same pattern that has been seen in the past is still true. The bacteria analyzed will be *Enterococci*, which is usually seen in intestinal tracts of animals and humans and not normally found in the environment.

Some of the potential sources that have been identified are urban storm water run-off, wastewater treatment plant discharges, livestock (includes horses, pet and bird), agriculture, septic systems and colonias.

The presentation and maps that Dr. Mott presented can be viewed at the following web site: http://www.tnrcc.state.tx.us/water/quality/tmdl/67-OsoSamplingPlan.pdf.

WATERSHED MODEL – Rick Hay

Rick Hay from the Center for Water Supply Studies at Texas A&M University Corpus Christi gave the next and final presentation on the Oso watershed model that he is preparing. He explained that the reason a model is needed is to better understand the interactions between the different components in the watershed. Mr. Hay said that the model is a mathematical representation of what is actually happening in the field (watershed), using standard laws of physics to track what is going on. He said that this TMDL model adds the capability to track a particular water quality component as it moves through the hydrologic system.

Some of the information that is needed for the model is the flow of the streams, elevations, land use, soil characteristics and precipitation. Mr. Hay explained that there

are various model codes that could be used in the project and their basic characteristics. He has gathered various data from TCEQ, USGS, etc. that will be used such as DO, pH, *E. coli*, water temperature, and *Enterococci*. Mr. Hay explained that modeling is a simplified representation of a complex system.

Mr. Hay reported that two models were going to be run side by side for the project, ArcHydro and SWAT. At the end of the project a comparison will be made between the two models to see how well each one does.

Mr. Hay concluded with questions and announced the next WAG meeting will be in late spring or as soon as the model calibration is complete. For a detailed look at the model presentation see the following site:
http://www.tnrcc.state.tx.us/water/quality/tmdl/67-OsoTMDLModeling.pdf

TCEQ - Texas Commission on Environmental Quality
TMDL – Total Maximum Daily Load